

## **REMARKS/ARGUMENTS**

This is responsive to the Final Action dated July 29, 2003. Claims 20 and 22 have been amended. Reconsideration is respectfully requested in view of the above amendment and the following remarks.

Claims 20 to 24 are pending.

### **Claim Rejection - 35 U.S.C. § 102(b)**

The Examiner rejects claims 20-22 under 35 U.S.C. 102(b) as being anticipated by Teather et al.

The present invention, as claimed in the amended claim 20, is directed to a cloned truncated glucanase sequence. Such truncation results in glucanase activity significantly higher than the activity that the wild type glucanase normally exhibits. The truncated enzyme has an intact N-terminal (without the 27 amino-acid signal peptide) and a shortened C-terminal.

Applicants have discovered that when up to 78 (322 amino acids minus 244 amino acids) amino acid residues are removed from the C-terminal, the enzyme exhibits higher activity.

Teather et al. teach a cloned DNA sequence coding for a 27 amino acid signal peptide and a wild type glucanase having 322 amino acids that is 100% identical to amino acid residue 28th through 349 of SEQ ID NO: 3. Teather et al. also specifically indicated (at page 3838, left column, the 6th full paragraph) that the isolated matured glucanase does not contain the 27-amino-acid signal sequence, located at the N-terminal of the sequence. In other words, the sequence of the wild type glucanase never includes the signal peptide, as many other matured proteins produced *in vivo*. Teather et al. never teach that a glucanase having the unremoved signal peptide could have any activity or even exist *in vivo*. Thus, it is clear to a person of

ordinary skill in the art that the term "glucanase" means the enzyme without the signal peptide attached.

The presently amended claim 20 requires that the isolated truncated glucanase has an enhanced glucanase activity. Given the above explanation as well as the description in the specification, it is unequivocal that the enhanced glucanase activity recited in the claim is the activity which is compared to the activity of a matured wild type glucanase, not to the activity of an enzyme having a signal peptide attached. Nevertheless, applicant has amended claim 20 to further clarify that the enhanced glucanase activity is relative to the matured wild type glucanase to distinguish the teaching in Teather et al.

Teather et al. also teach a number of C-terminal truncations (page 3838, right column, the third full paragraph) of the cloned glucanase, all of which are shorter than those described in the present invention. The Teather et al.'s truncations exhibit a significant reduction of the glucanase activity, compared with the matured wild type glucanase. In contrast, the C-terminal truncations in the present invention result in enhanced enzyme activity, compared with the matured wild type glucanase. Thus, Teather et al. do not teach the truncations in the present invention.

Since Teather et al. do not teach each and every element of the present invention, as recited in the amended claim 20, claim 20 is not anticipated by Teather et al.. For the same reason, claims 21-24, which depend on claim 20 are not anticipated by Teather et al..

Accordingly, the rejection to claims 20-22 under 35 U.S.C. 102(b) has been overcome and should be withdrawn.

**Claim Rejection - 35 U.S.C. 112**

The Examiner also rejects claims 20-24 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicants have amended claims 20 and 22 to remove the claim language that the Examiner considered to be indefinite. In view of the present amendment, applicants respectfully request that the rejection to claims 20-24 under 35 U.S.C. 112, second paragraph be withdrawn.

Allowance of claims 20-24 is respectfully requested.

Applicants, through its attorney Yunling Ren, had a telephone interview with the Examiner Yong Pak on September 16, 2003. The Examiner Pak indicated that it is unnecessary for applicants to summarize the interview as she would provide a summary of the interview.

It is believed that no fees or charges are required at this time in connection with the present application; however, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,

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